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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,572	02/27/2004	Bing Zheng	10541-1929	9288

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EXAMINER

LUBY, MATTHEW D

ART UNIT PAPER NUMBER

3611

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,572

Applicant(s)

ZHENG ET AL.

Examiner

Matt Luby

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-11, 13 and 15-26 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 5, 6, 8-11, 13 and 15-26 is/are allowed.
6) ☒ Claim(s) 4 and 7 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitations from lines 18-28 of claim 4 are redundant with the limitations are enumerated in lines 7-17 of claim 4. These limitations are vague and indefinite because it is unclear what further limiting they provide.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magnus in view of Karnopp et al.

Magnus discloses a system (10) for compensating understeer and oversteer in a vehicle having a steer by wire system (this is a functional limitation and therefore goes to the intended use of the system, 10, and a recitation of the intended use of the

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claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art MPEP Chapter 700), the system comprising: a driver interface system (20) for receiving steering input; a sensor system (38) to sense the steering input and generate a steering control signal (36); a controller (30) in electrical communication with the sensor system to receive the steering control signal, wherein the controller is configured to determine when an understeer or oversteer condition exists and generate a steering assist signal (col. 1, lines 14-17; 25-29; col. 2, lines 20-58; and a road wheel steering actuation system configured to receive the steering assist signal and adjust a road wheel angle based on the steering assist signal (col. 2, lines 27-31, i.e., the power assist actuator); wherein the controller is configured to determine if an understeer condition exists based on a measured yaw rate and a measured lateral acceleration signal (col., 1, lines 7-11 discuss that oversteer or understeer, i.e., instabilities, are generally a function of a combination of the yaw rate and lateral acceleration of the motor vehicle; col. 2, lines - discuss that upon processing of measured yaw rate from yaw rate signal 40 and lateral acceleration from a lateral accelerometer not shown, an output signal 32 is derived which ultimately effectuates the manipulation of the power steering system by autonomously changing the angle of the steerable wheels and thereby maintaining stability of the vehicle and preventing oversteer or understeer); and wherein the controller is configured to generate a steering assist signal such that a yaw rate error and a lateral acceleration error is minimized (col. 4, lines 52-57).

Magnus does not specifically disclose the controller determines an understeer condition exists when the magnitude of the desired yaw rate is greater than the measured yaw rate by a first threshold value for a time period and the magnitude of the desired lateral acceleration is greater than the measured lateral acceleration by a second threshold for the time period, that an oversteer condition exists when the magnitude of the desired yaw rate is less than the measured yaw rate by a first threshold value for a time period and the magnitude of the desired lateral acceleration is less than the measured lateral acceleration by a second threshold for a time period

Karnopp et al. disclose that understeer exists when the desired yaw rate and lateral acceleration are greater than the measured values of such for a time period (in the discussed embodiment of Figures 4 and 5, lateral acceleration is measured, converted to a yaw rate and compared with desired values in the same way discussed with the embodiment of Figure 3, i.e., as stated in column 3, lines 17-19, when the desired values are greater than the measured values, an understeer condition exists), that an oversteer condition exists when the desired yaw rate and lateral acceleration are less than the measured values for such parameters for a time period (col., 3, lines 20-2, col., 3, lines 1-14; wherein lateral acceleration is just wheel angle squared) in order to provide a steering system which minimizes oversteer and understeer conditions in a simplified manner requiring a minimum number of parts (col. 4, lines 35-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide that the controller determines an understeer condition exists when the magnitude of the desired yaw rate is greater than the measured yaw rate by a first

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threshold value for a time period and the magnitude of the desired lateral acceleration is greater than the measured lateral acceleration by a second threshold for the time period, that an oversteer condition exists when the magnitude of the desired yaw rate is less than the measured yaw rate by a first threshold value for a time period and the magnitude of the desired lateral acceleration is less than the measured lateral acceleration by a second threshold for a time period on the Magnus device, as taught by Karnopp et al., in order to provide a steering system which minimizes oversteer and understeer conditions in a simplified manner requiring a minimum number of parts.

Allowable Subject Matter

Claims 5, 6, 8-11, 13 and 15-26 allowed.

Response to Arguments

Applicant's arguments filed 8/15/05 have been fully considered but they are not persuasive.

Applicant argues on page 13 that "Karnopp does not teach or suggest either (1) that both the desired yaw rate and desired acceleration are above or below the measured yaw rate and measure lateral acceleration to determine that an understeer or oversteer condition exists, or (2) that a first threshold is applied to the comparison between the desired yaw rate and the measure yaw rate and that a second threshold is applied to the comparison of the desired lateral acceleration to the measure lateral acceleration."

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Regarding (1), the Examiner has already specifically pointed out that in the discussion in column 3, related to the embodiment of Figures 4 and 5 that rather than solely calculate measured yaw, lateral acceleration can be sensed and converted to measured yaw, thereby providing the requisite comparison of both yaw and acceleration (which, according to Applicant's is merely a square root deviation away anyways, so the fact will always exist that when calculating one, you are necessarily calculating another, and when comparing one, you are necessarily comparing another.

Regarding (2), the fact that the words "a first threshold" and a "second threshold" precede value lend no patentable weight to the claim. Karnopp et al. clearly states that oversteer or understeer will always exist when there is a difference between the measured yaw rate (whether sensed directly, or calculated from a measure lateral acceleration) and desired rate. The fact that Applicant's term this a "threshold value" does not differentiate the claim from the prior art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt Luby whose telephone number is (571) 272-6648. The examiner can normally be reached on Monday-Friday, 9:30 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on (571) 272-6612. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Matt Luby
Examiner
Art Unit 3611

ML
November 8, 2005


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